

COP5611 Programming Assignment NO. 1

Orientation to Programming Requirements

OBJECTIVES

- Understand the programming requirements for the course
- Get familiar with the UNIX programming environment (make, tar)
- Get familiar with socket programming (TCP and UDP)

DESCRIPTION

In this project, you will implement a time server that would respond to both TCP and UDP requests. Let the executable for the server be named *server*. When the server is run with command *server port*, it will listen to both the TCP *port* and the UDP *port*. When a TCP connection is made to the port, the server will reply to that connection with the current time in a string format and then close the connection. When a UDP packet is received from that port, the server will reply with current time (in a string format) in a UDP packet. Since UDP packets may arrive very quickly, a reply suppressing scheme should be incorporated so that for each UDP end point will at most get one reply per second regardless how many requests were sent from that end point.

To test your server, you will also implement a TCP time client and a UDP time client, that would contact the server and display the time.

You need to use 'make' to generate all the executables. You will also need to write a README file to describe how to produce the executables and how to run your programs.

GRADING POLICY

- Style, Makefile, README, etc (20)
- TCP server (15)
- UDP server (15)
- Combined TCP/UDP server (30)
- TCP client (10)
- UDP client (10)

DEADLINES AND MATERIALS TO BE HANDED IN

Jan. 31, 6PM. A hard copy of your programs/README/makefile. You must also send a clean directory that contains all the source code and supporting files (README, makefile) as a tar file to karwande@cs.fsu.edu. Please do not include executables and object files in the tar file.

MISCELLANEOUS

You might need to use the following system calls in this project, *time*, *ctime*, and *gettimeofday*.

This is an individual project. Cheating policy will be strictly enforced.